

### Forward-Looking Collision Avoidance and Sub-Bottom Sensor for Conceptual High-Speed Submersibles

# E-Field Technology Helps the Navy Avoid Costly Accidents



### Technology and Innovation

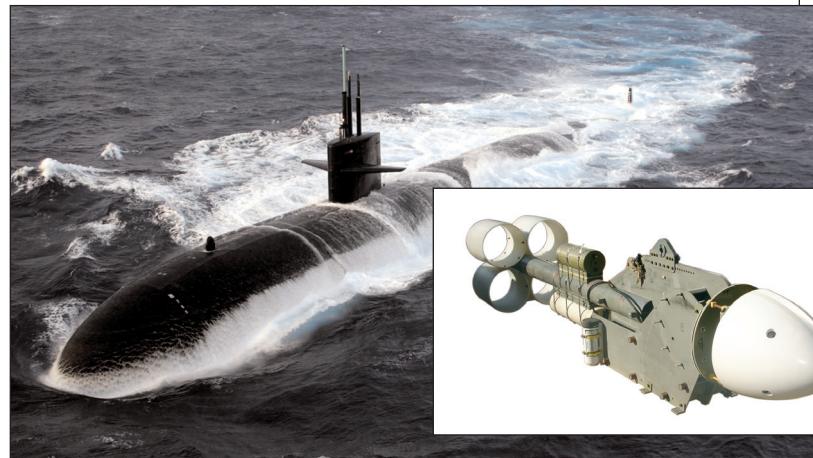
Information System Laboratories' (ISL) DARPA SBIR project explored using electric-field (e-field) sensors and advanced processing technology to provide submarine commanders with early warning information necessary to avoid collisions when proceeding to periscope depth. This is a major leap beyond traditional acoustic technology, which has a number of flaws that leave submarines open to an increased probability of collision. Although e-field sensor technology is in wide use for a variety of other applications—including monitoring of electrical equipment and measurement of high-voltage outputs from transmission lines—ISL's exploitation of this technology for anti-submarine warfare and submarine collision avoidance is unique.

This innovative technology—developed under a DARPA SBIR contract—has attracted the interest of a number of U.S. Navy organizations, and shows promise in homeland security applications such as coastal and harbor defense.

### Joint Collaborations

The DARPA SBIR project has attracted the attention of a number of organizations, leading to a variety of important collaborations, including:

- University of Washington, Applied Physics Laboratory



- Office of Naval Research
- SPAWAR Systems Center, San Diego
- NAVSEA Program Executive Office – Integrated Warfare Systems 5 (PEO-IWS 5)
- Sparton Electronics

The Enhanced Collision Avoidance System reduces a submarine's risk of colliding with other vessels in acoustically unfriendly environments.

### Lessons Learned

During the course of its DARPA SBIR program, Information Systems Laboratories has developed a number of best practices that have helped ensure the project's ultimate success, including:

- Since military organizations and warfighters are your ultimate customers, their needs must be kept front and center.
- The best way to ensure that customers are satisfied with your efforts is to keep them well informed and up to date.

## Information Systems Laboratories

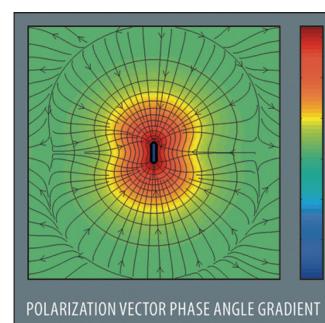
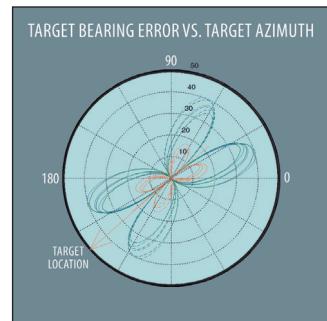
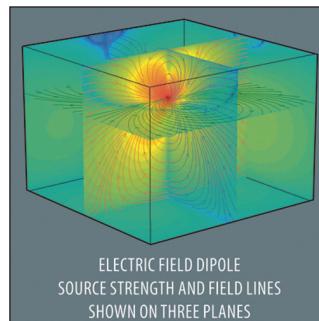
- Advances in technology are the result of creating a business culture that encourages employees to follow their dreams. Successful products merge the best technology with cost-effective solutions for customers.

### Economic Impact

Participation in the DARPA SBIR program has opened the door to new business opportunities for Information Systems Laboratory, leading to significant personnel and financial growth for the company. Successful performance under the DARPA SBIR enabled the company to win a similar U.S. Navy SBIR to transition the technology to the fleet. The DARPA SBIR is one of several building block initiatives the company has undertaken to win larger programs that command the capabilities of multiple divisions within Information Systems Laboratory, helping the company attain revenue growth in excess of 20 percent.

### About the Company

Information Systems Laboratories, Inc. (ISL)—founded in 1982—has headquarters in San Diego, California, and additional offices in Maryland, Virginia, Idaho, Washington, and Alabama. The company provides technical solutions to critical defense, intelligence and commercial problems, including signal processing, nuclear systems analysis, advanced sensor platforms, and sophisticated algorithm development. In 1996, ISL embarked on a major expansion plan which included conversion from a sole proprietorship (95 percent owned by the founder) to an employee-owned company with stock distributed among all employees. ■



### Company Information

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Number of employees: 150